STAT

"Abstracts of Articles Published in ~~"Contents of the Symposium (5 Authors, 8 Articles)~~ 'Problems of Climatology' No. 48 (1950) in the Series 'Works of the Institute of Geography, Academy of Sciences USSR'"

Source: Voprosy Klimatologii
Trudy Instituta Geografii, XLVIII
Moscow-Leningrad: 1950

Authors: Ye. M. Baybakova, A. I. Baranov,
L. V. Klimenko, Ye. Ye. Fedorov, Ya. I. Fel'dman.

STAT

CONTENTS OF THE SYMPOSIUM 'PROBLEMS OF CLIMATOLOGY', No. 48 (1950) IN THE SERIES 'WORKS OF THE INSTITUTE OF GEOGRAPHY, ACADEMY OF SCIENCES USSR'.

/Note: The following information came from the irregularly-published brochure 'Trudy Instituta Geografii'; namely, No. 48 (1950, entitled 'Voprosy Klimatologii'. It is published in Moscow and Leningrad; responsible editor is Academician A. A. Grigor'yev.

The basic theme of these works is how climate can be ultimately changed to desired types by afforestation, etc./

1. Ye. M. Baybakova.

"Dynamics of Local Weather During Cold Intrusions into the River Valleys Riona and Kura in the Winter and Summer," pages 3-31.

Abstract: One of the most essential problems in the study of the genesis of climate is the investigation of the dynamics of local weathers under various physico-geographical conditions. The authoress' investigations in the river valleys Riona and Kura were conducted by the method of complex-dynamico-climatological analysis proposed by L. A. Chubukov (1949), which is based on methods of complex climatology, on the one hand, and of dynamic climatology, on the other hand. From complex climatology we take the expression of climate in local weathers (cf Fedorov, 1925, 1927, 1934 etc), and from the dynamic we take the position that the forming of weather is considered under conditions of separate homogeneous synoptic processes. The laws governing the formation of local weathers, due to three weather-forming factors: conditions of radiative regime, circulatory conditions, and character of the underlying surface, are investigated by analyzing the dynamics of local weathers (simultaneously in the entire territory of the region under study) over the extent of the entire homogeneous synoptic process.

In such a method of investigation one can study the dynamics of local weathers by following them from day to day in the limits of the given synoptic situation. This permits, by way of investigation of a series of monotypical synoptic conditions for each meteorological station, one to observe in isolation the laws, peculiar to the region of its distribution, which govern the local weathers under conditions of the given process (Chubukov, 1949).

In this work, the intrusion of a cold air mass is assumed after such a process. The investigation was conducted according to the following scheme:

1. The position preceding the intrusion is characterized by an air mass occupying a region before intrusion and thus by a type of local weather in the region where the meteorological station is disposed.

2. The intrusion or, more accurately, the moment of intrusion is identified with the passage of the nonstationary front and is characterized by both the general circulatory conditions and the type of local weather on the day of passage of the front.

3. The transformation process represents a process of gradual variation in the physical properties of the air mass in the course of a homogeneous synoptic process.

2. A. I. Baranov

"Climatical Times of the Year in the European Part of the USSR," pages 32 to 48.

Abstract: Considers: The monthly sums of direct and scattered radiation (in large calories) at Pavlovsk and at Yevpatoriya (according to Kalitin, 1938); the annual behavior of radiational balance at latitudes 50° and 60° (according to T. G. Berlyand, 1948); the frequency of winter and summer types of circulation

(frequency versus month); the structure of climate in the weathers (% of 17 weather types versus month; according to Fedorov and Baranov, 1949); and maps showing: beginning of spring and its duration; beginning of summer and its duration; beginning of fall and its duration; winter and its duration (in the European part of the USSR).

3. L. V. Klimenko

"Variations in the Local Weather During Transformation of Air Masses in the Summer and Winter in the Lowlands of Kazakhstan," pages 49 to 62.

Abstract: The aim of the present work is to establish the laws governing, in successive interchange, the classes of local weather during transformation of air masses in the summer and winter in the Kazakhstan lowlands. By "transformation of air masses" we mean such a process of variation in the physical properties of an air mass, as a result of which the air main begins to play a new role in the general circulation of the atmosphere, passing to a new geographical type, and obtains a new name.

The urgency and importance of this problem are determined by the fact that in the process of transformation of air masses the action of the underlying surface on the climatic conditions appears in its purest form. Therefore the study of this process is a necessary premise for the calculation of possible variations in climate, as a result of planned systematic transformation of weather by means of afforestation, irrigation, etc.

Considers: Types and schemes of variations in local weather in the various "landscape" zones /landshaftnaya zona/; the local weathers forming in the various zones of the Kazakhstan lowlands at the beginning and end of the period of air-mass transformation; the dependence of the local weathers, occurring in the course of the transformational periods, upon the preceding weather; the fundamental

weather types of the 'landscape zones' in the Kazakhstan lowlands (namely: boundary with forest-steppe; grassy steppe; boundary with semi-steppe; semi-steppe; desert); frequency of fundamental types of weather in newly-come ('alien') and local weather in the period of transformation of air masses in the winter; dependence of local weathers, forming in the course of the transformational periods, upon the preceding weather; frequency of the fundamental types of weathers in the Kazakhstan lowlands in the winter.

4. Ye. Ye. Fedorov

"Local Weather and Its Role in Studies of Climatic Conditions on the Earth's Surface," pages 63 to 70.

Abstract: Considers: Significance of different types of local weathers for harvest yield and duration (prolongation) of wheat development in the 'kushcheniye-kolosheniye' phase (experimental stations in Bezenchuka); computed and observational data on the approach of the cotton plant's developmental phase in Astrakhan and Kizlyara; comparison of the plant zones in the southern half of the European part of the USSR, with frequency of days with drying wind [sukhovey] in July and August.

5. Ye. Ye. Fedorov

"Variations in the types of Local Weather in the Continental Tropical Air Mass in the Summer Months on Its (Mass') Way from the Southeast and South to Moscow," pages 71 to 87.

Abstract: The present work is concerned with the division of genetico-climatical investigations of the origin of the local weathers forming climates. Considers: The meteorological stations in the path of the air mass from the southeast and also south; weather types in the period of origin of weather type kTV from 30 June to 3 July 1911; the mean absolute moisture in the continental

tropical air mass; general summary of weather types in the continental tropical air; southeast, and south, currents during the periods 1905, 1917, 1901,1906, 1916 (June, July, August).

6. Ya. I. Fel'dman

"Contribution to the Problem Concerning the Influence of Forest Areas on the Formation of Local Weather in the Taiga Zone of the European Part of the USSR," pages 88 to 95.

Abstract: Considers the correlation of the number of cases of certain classes of weather with forest-steppe; and correlation of the mean amount of precipitation with forest-steppe.

7. Ya. I. Fel'dman

"The Role of Oases and Deserts of Central Asia in the Formation of Local Weather with Drying Winds /Sukhovey/," pages 96 to 102.

Abstract: Considers: The types of drying winds /sukhovey/ observed in the lowlands of Central Asia; composition of the types of drying winds of various intensity; the relative frequency of drying winds of various intensity in % of total number of drying winds; the frequency of individual types of drying winds for various air masses.

8. Ya. I. Fel'dman

"Certain Results in the Investigation of the Influence of Lowland Relief on Summer Rainfall," pages 102 to 109 (end).

Abstract: Considers the correlations among the rainfalls, separation (disintegration) of the relief, height above sealevel, and distance from the sea.

- E N D -